The I-Team GeoSpatial Information Implementation Initiative

SUMMARY

Everything happens some**where**. The I-Team GeoSpatial Information Initiative (**I-Team Initiative**) is a shared planning and implementation process for more effective and efficient business processes that supply quality geographic information essential for e-government and digital democracy. The Initiative generates sustainable collaborative momentum. Tapping state and regional leaders improves technical planning and reduces the technology risk of federal agencies requiring such data. A senior management business case approach develops institutional and financial incentives. Government and the private sector are already using the Initiative to speed design of a common geographic data framework that will standardize access to base maps and other strategic thematic data at the scale, resolution, accuracy and update cycle most appropriate.

THE ULTIMATE VISION

Government delivers service through a series of interdependent, nested business processes with other governments, across agencies, with private sector contractors and for private sector "consumers." Ultimately, service delivery to businesses or citizens occurs some**where**, the required resources are assembled some**where** and assets built some**where,** and natural and man-made conditions, weather and economic patterns affect service capacity and needs **there**. Place becomes a common denominator for policy-makers to clearly see and communicate capacity, need, resources, a balance of priorities and performance benchmarks. Location-aware services can be better organized, built and funded in light of local neighborhood needs, capacities and supplemental resources. Complex problems, adaptive management and innovative regulatory and public-private partnerships require a common set of lenses. A shared map of all relevant factors, stakeholders and leverageable local assets and programs lets agencies avoid duplication, waste and gaps and seize synergies in near real time.

The Initiative's many short term and long term benefits include:

- Increasing quality, consistency, reliability and reuse of place-based data.
- Making better data available cheaper and faster, which data can be widely discovered and reused for multiple purposes.
- Making data more consistent and accessible nationwide focuses the view of states and communities that Congress and the White House use to prioritize, authorize and operate programs for local benefit.
- It improves the efficiency of coordinating intergovernmental and private sector efforts intended for the same clusters of individual and industry need.
- More reliable data drives more accountable performance and results-oriented management of environmental, education, infrastructure and other programs. The data directly determine the effectiveness and accountable flexibility of government programs that put people to work, improve economic development options and solve people's problems.

- Public access to such data improves citizen involvement in the digital democracy, thereby improving program accountability and performance and providing relief from the cynicism of non-responsive, unadaptive bureaucratic processes.
- American companies dominate the software, remote sensing, GPS and other technologies involved in producing, analyzing and using spatial data. The Initiative supports demand for interoperability and functionality in such technologies and drives domestic and international sales.

EXAMPLES OF SUCCESSFUL IMPLEMENTATION

In just its first year, the I-Team Initiative process has led to many successful implementations and innovative partnerships:

- Relying on State & Local Leadership – States like Maryland, Texas and Utah have become early adopters, generating significant I-Plans for building out their spatial data infrastructure basemaps. Their plans are cross-fertilizing the planning in other states. No federal mandate or regulatory process was used to "do what makes sense." All involve Federal Partners from local field offices who stand to benefit from the significantly lower cost of reliable data.
- Supporting Regional Decision Support Processes – The counties in and surrounding New York City formed the first "regional" I-Team. They focused on four high-level business process drivers for spatial data – public safety, environment, transportation and health. Never before had the plans for building large-scale (granular) county-level thematic maps been compared and aligned. The resulting data inventories and common business process discovery is leading to a more collaborative approach to regionalism, and promises to pave the way for reducing the technology lag time and risks of seamless decision support tools for this major metropolitan region. Objectively (but with great sorrow for the lives lost), we can point to the recovery from the September 11th terrorist attacks on the World Trade Center as showcasing the heroic regional data coordination that the City assembled to deal with emergency management, transportation, environmental and other public safety concerns. More effective planning and operations let federal dollars go farther and arrive faster to support regional public safety, environment, transportation and health.
- Rethinking Nested Business Processes – The Army Corps of Engineers is spending $8 billion to restore the Florida Everglades biosystem. Managing the restoration project requires accurate real-time environmental monitoring information to set and gauge performance benchmarks. Just three months after a briefing co-sponsored by EPA, the affected counties and the State of Florida formed a prototype Environmental I-Team (the first I-Team dealing with a single business process). They are taking the initiative to inventory their environmental monitoring and management information systems. They are finding and likely to resolve gaps, redundancies and inconsistencies among the 200 area monitoring programs managed by at least 20 different institutions in the area. The resulting design and business case for *financially sustainable, scientifically optimized* monitoring information infrastructure will improve future projects and ongoing air, water and other environmental programs. From a federal perspective, the resulting alignment of intergovernmental resources and knowledge management will

improve the chance of success and local accountability for the $8 billion Everglades project.

- Restarting Statewide Technology Planning Discussions – California and Pennsylvania are typical of states with diverse economic and natural constraints, hundreds of county governments, and an abiding faith in the power and accountability of home rule politics. For these states, the I-Team Initiative has become a rallying post for taking the long view of organizing interoperable technology platforms as the means for modernizing bureaucracy by embracing E-government innovations. In both cases, the penetration of the NSDI into state- and county-wide technology plans is accelerating rapidly.

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Place Matters, it explains Context. Why Spatial Data is Important.

Nearly all data is geographic: A name means little to marketers without an address. A business' location determines its market, service area, customer base and competition. Often data means more when it is integrated with other data describing to the same place. When shared and integrated using open, interoperable technology, spatial data is a powerful tool to improve analysis and decision-making. It allows the full context and range of choices to emerge. Spatial data is key to e-government, wireless telecommunications, facilities management, environmental monitoring, emergency management, E-911, economic development, public safety, engineering, utilities infrastructure and dozens of other market applications in government and industry.

Prior Federal Activities Focused & Drove Technology & Standards

Place matters. Spatial data matters – everywhere.

For a decade, the FGDC has stewarded development of the NSDI, focusing on the common principles, technical standards, and clearinghouse networks needed to enable governments, businesses and the public to use spatial data most effectively. The I-Team Initiative will create a coherent complementary set of institutional and financial incentives so all levels of government and the private sector can align needs and resources and the NSDI can become a mainstream foundation for e-business, e-government, and digital democracy.

What's Unique About This Initiative?

Governments have been spatial data investors for 35 years, industry nearly as long. Although spatial data investments are running at almost $10 billion annually, no mechanism exists to pool and align the capital investment plans of federal, state, local and tribal authorities, and the private sector to build and maintain sharable spatial data. The I-Team Initiative grows such mechanisms.

The Initiative is an adaptive, flexible and inclusive process for data producers and users to align their decisions to build, invest in and use spatial data and decision support tools in accordance with financeable, nationally consistent, locally responsive and sustainable standards. It optimizes the benefit, reduces the burden and improves the quality of spatial data in a way that carries out longstanding OMB and Congressional technology objectives. It maximizes the role of interoperable technologies and unleashes the full potential of investments being made by governments and the private sector. Although the Initiative embraces prior work, it adheres to certain core assumptions:

1. Incentives work better than mandates.
2. Interoperability is not self-executing. Migrating to interoperable systems may require incentives to help some users understand, accept and afford systems designed to be distributed nodes on a network.
3. Society plans, builds, maintains and replaces infrastructure (physical and information) in a lifecycle of investments over years, not in a single year, and across many people and institutions. Those investments carry technology and financial

risks. Such risks can be minimized when users of common infrastructure align their investments along the path of that lifecycle by adopting shared, realistic investment criteria.

4. Interoperability produces economies of scale. The savings must be fairly allocated among all levels of government and the private sector to produce the greatest leverage.

5. The most valuable, granular data that businesses and governments use to plan, operate and measure their performance is local.

Essentially, the I-Team strategy for federal technology investments turns the national paradigm for technology investment in spatial data and decision support tools around, empowering and leveraging a diverse set of co-investors from all sectors of the economy. It recommends that society coordinate its investments in spatial data. Instead of everyone investing separately, engendering duplication and waste, society should invest in the entities best able to provide, maintain, and share the large scale, higher accuracy spatial data needed by local jurisdictions and, increasingly, by all sectors of the economy. In many, if not most cases, these are the local jurisdictions themselves, as well as private sector companies, rather than federal and state governments. Other users of the data align resources and co-invest with the producers of data.

SELF-ORGANIZING & SELF-AUTHORIZING INFORMATION CONSORTIA

Instead of top-down mandates, the I-Team Initiative relies on locally formed, interdependent partnerships of federal, state, local, and tribal authorities, academia, and the private sector (**I-Teams**) to implement state and regional portions of the NSDI in accordance with national interoperability specifications and data standards as part of their ordinary business processes. The I-Teams are voluntary, open, flexible and adaptive collaborations for shared capital planning, building, using and financing spatial data. They optimize and align the interdependencies allowing institutions and citizens to rely on and share quality data from other trusted sources. TIE and CEG are coordinating the formation of the I-Teams and, with Urban Logic, planning and administering the overall Initiative on behalf of FGDC and OMB.

WHERE DOES THE FINANCIAL SOLUTIONS TEAM FIT IN?

The FST will help I-Teams develop a shared capital planning methodology. The FST's resulting business case will help institutions join and stay part of the I-Team partnerships and commit to co-invest in and rely on the spatial data development arrangements stewarded by the I-Teams. Unless the FST existed, each I-Team and the Federal Partners Team would separately be challenged to explain the common elements of their investment strategy's benefits.

Although spatial information systems are critical societal infrastructure built up over and lasting years (decades) as platforms for other institutional processes, they traditionally have been funded on a renewable, annual basis. As any finance major or junior budget officer knows, financing long-term assets with short-term money leads to poor planning (operating vs capital) and inefficient financing of systems that are harder to use, maintain, replace and share.

The FST will explore how to align and use existing appropriation and procurement resources most effectively. By aligning resources and using interoperable data, I-Teams not only will reduce costs significantly, but will greatly improve service to the public. The savings and public benefit resulting from improved decision-making will underpin the FST's business case, and provide justifications for more responsive and adaptive public sector funding and innovative interagency and intergovernmental financing options.

The FST will explore possible private sector and public/private funding alternatives that would treat the NSDI as a long-term capital asset instead of an annual operational expense. These would include capital alignment incentive mechanisms such as intergovernmental participation agreements and infrastructure bond pools that would support the issuance of bonds or other long-term capital facilities.

HOW THE FST WILL ORGANIZE

The FST will work through task forces, organized into two broad themes the **Business Case Task Force (BCTF)** and the **Capital Access Task Force (CATF)**. An Integration Team of [7] people nominated by each Task Force will coordinate the task forces and integrate their recommendations and products. Urban Logic is coordinating the work of the FST on behalf of FGDC and OMB.

Business Case Task Force

The BCTF will build the business case for aligning resources. To do so, it must focus on the factors optimizing the annually cycle of factors that influence and constrain spatial data investments, including:

- Annual appropriations cycles and jurisdictions
- Existing legislative and executive program missions that drive the demand for spatial data
- The New Economy's market demand for spatial data to support commercial, location-based services
- E-Government's demand for spatial data to find, coordinate and reduce the burden of information on citizens and businesses
- The technology risk factors in administering spatial knowledge projects in an environment in which technology versioning and deployment cycles are ever shorter and are driven more by the market than by government

Using the estimated costs of needed investments compiled by I-Teams, the BCTF will study I-Team needs for capital, and consider the amount and sources of new capital needed beyond existing investments over the next 5 years. The BCTF will build an economic and financial model to assess the effectiveness of the nation's (not just the federal government's) investments in spatial data systems. The model may include objective measurements as cost-benefit; return on investment; and public investment: GDP multiplier effect). It will explore how financial responsibility for data investments should be allocated equitably to reflect the economies of scale resulting from aligning resources. Each I-Team participant will be able to use the business case and econometric models to justify the macroeconomic and microeconomic impacts of I-Team plans.

The FST analyzes institutional and financial challenges to realizing I-Team capital plans. The BCTF will then be in a position to recommend improvements in procurement, ap-

propriations and other such processes. The recommendations may include model legislation or other documents intended to foster informed debate and collaborative action.

Capital Access Task Force

Using the business case, cash flow, economic models and process innovations developed by the BCTF, the CATF will examine the options for improved public sector financing, the public financial markets, private equity and venture capital markets might offer to provide the capital required to fund the I-Team capital plans. To do so, the CATF must consider the following:

- Are multi-year appropriation levels, certainty and flexibility sufficient?
- What statutory, regulatory and Administrative (Executive Orders, OMB, etc.) options exist or are needed to pool and align intergovernmental appropriations or other "cash flows?"
- What market demand exists to invest in bonds or other instruments secured in part by such cash flows?
- What should the investment criteria be to reflect (i) public goals (NSDI, IT capital planning and paperwork reduction, public access to government information, privacy, security, Freedom of Information, etc.), (ii) technology (interoperability, metadata compliance, Web-readiness), and (iii) commercial interests and opportunities?
- Who can or should be the "borrower" on behalf of the I-Teams, Federal Partners, users or other beneficiaries of funding?
- How would securitization and other financial engineering reduce borrowing costs and risk levels?
- What federal credit mechanisms (such as revolving loan funds, loan guarantees, take-or-pay arrangements) make sense to improve the financial sustainability of the I-Teams?
- Given the Digital Economy's appetite for spatial knowledge, what strategies for equity funding of decision support tools or other elements of spatial knowledge infrastructure can be responsibly encouraged?

The CATF may draft model financial instruments such as bond indentures, memoranda of understanding, and other documents required for any innovative private sector financing options. I-Team participants could use the draft forms.

WHO SHOULD PARTICIPATE IN EACH TASK FORCE?

Each Task Force requires multi-disciplinary expertise. A preliminary list of participants for each Task Force appears in the attached spreadsheet. Participation is likely to expand as the Financing Solutions Team moves forward.

ONE-STOP SHOPS LET I-TEAMS ALIGN FEDERAL RESOURCES & REDUCE IMPLEMENTATION DELAYS & TECHNOLOGY RISK.

I-Teams are highly leveraged and efficient. Beyond the FST, I-Teams have two other teams available to achieve their goals. A **Federal Partners Team** composed of senior Federal officials provides direction for Federal participation in each I-Team. Federal champions in each agency give each I-Team direct access to senior Federal officials. Federal Partners will make sure their agencies work together to explore interagency and intergovernmental partnerships, and to align investments. A **Technology Advisory**

Group representing the spatial technology industry will make sure I-Teams have available to them the latest and most advanced technology solutions. As other shared challenges emerge through the I-Team process, new teams and advisory groups may form to speed synergy and leverage the thinking and investment activities of the I-Teams.

FURTHER BACKGROUND

For further background, see attached Summary of the OMB Geospatial Information Initiative (http://www.fgdc.gov/I-Team.html), and the Initiative's preview site at http://www.fgdc.gov/I-Team.

CONTACT INFORMATION

Further information is available from the following members of the Steering Group:

FGDC: John Moeller, Staff Director
OMB: Daniel Chenok or Anthony Frater
Council for Excellence in Government: Steve Cochran or Katherine Hansen
Trebizon International: Ronald Matzner, I-Team Coordinator
Urban Logic: Bruce Cahan, Chair Financing Solutions Team

Summary of OMB Roundtables on July 7 and 18th, 2000

OMB INFORMATION INITIATIVE
COLLECTING INFORMATION IN THE INFORMATION AGE
GEOSPATIAL INFORMATION ROUNDTABLE

SUMMARY OF PROCEEDINGS

On July 18, 2000, the Office of Management and Budget (OMB) held a public roundtable in cooperation with the Federal Geographic Data Committee (FGDC) and the National Partnership for Reinventing Government (NPR) to explore how to overcome the financial and institutional barriers to the sharing of geospatial information horizontally and vertically among Federal, State, local and tribal government agencies, and the private sector. The roundtable built upon a dialogue begun on July 7 in a general session on Information Technology. The roundtables were part of the Information Initiative "Collecting Information in the Information Age" conducted by OMB's Office of Information and Regulatory Affairs (OIRA) to examine how government may improve the quality of the information it collects and minimize the collection burden by maximizing the benefits of information technology. Over 110 senior officials from Federal agencies, states, cities, technology vendors, OMB, Senate Appropriations staff, and public interest organizations attended the July 18 meeting.

The July 7 and July 18 roundtables discussed and considered the inter-relationships among:

- Paperwork Reduction Act (PRA) goals to reduce the burden resulting from information collections
- Technology Investment optimization goals (Clinger-Cohen, GPRA, ITMRA)
- E-Government programs
- Digital Democracy goals, including enhanced accountability and interaction with citizens
- The evolution in the Federal Geographic Data Committee's (FGDC) stewardship of the National Spatial Data Infrastructure (NSDI) under Executive Order 12906
- The importance and ubiquity of geospatial information to electronic government and business processes
- Advances in interoperability that permit data built for one or common purposes to be used safely for multi-agency purposes
- Creative financing options that leverage state, local, tribal, and private investments in interoperable technology platforms

Several themes emerged from the open and spirited roundtable discussions. Participants made the following points:

1. Spatial data has long been part of government and business processes, but its value and ubiquity are only now becoming universally recognized because of new technology that can handle large volumes of data and interoperability standards.
2. Spatial data applications are rapidly increasing as banks, utilities, insurance companies, police departments, and other public and private sector organizations find new uses for location-based services, remote sensing, GPS and other technologies to better serve citizens and customers.
3. There is a lot of spatial data, but not enough of it is strategic spatial data that is easy to integrate and share. We need to develop strategic spatial data assets as a nation. We must accelerate the development of Framework data layers and standards.
4. Although open standards and interoperability increasingly are making it easier to integrate and share data, (for example, allowing the building of integrated data maps using information housed on multiple servers over the Internet), much work still needs to be done on standards and protocols (content standards and metadata standards). These are the rules of the road for trustworthy data sharing in the 21st Century.
5. Much geospatial data is created by organizations as a side effect of their regular work mission, and these organization need an incentive to conform to standards, maintain accuracy, share the data and help build the NSDI.
6. The NSDI can be a key component for enabling E-Government and E-Commerce to flourish. It could support the development of an Interactive Town Square that would deliver more accountable and effective Government services.
7. We can compare development of the NSDI to development of the Interstate Highway System. Like the interstate highways, the NSDI needs standards so everything fits. Like the road system, each layer of government has an appropriate role, as does the private sector. No one agency or level or government can or should build or fund its spatial data and decision support needs alone.
8. Scale is an important aspect of the NSDI. State, local and tribal entities will build much of the NSDI. We need to measure how much has been done and what gaps need to be filled, focusing on the Framework layers. We need a dynamic, "living" scorecard or status map, graphically showing the availability of different layers.
9. Government entities at all levels, as well as private sector organizations, are making major investments in spatial data needed for operations. The challenge for the Federal government is to leverage this investment, coordinate efforts, and help State and local governments, and the private sector make the data available regionally and nationally.
10. Public-private partnerships are a critical element in development of the NSDI.
11. By working together and building partnerships, natural clusters of Government and private sector collectors of information can collect and share better spatial data, faster, at less cost and burden, and with less technological and procurement risk.
12. Partnerships can form around many different "burning issues",

such as environmental monitoring, economic development, and disaster response and other public safety concerns. Skillfully framing the issue can help create the needed sense of urgency and build funding support.

13. The costs of data stewardship for municipalities, water districts, and other local, state and tribal government organizations are not insignificant. Partnerships can help share costs by capturing economies of scale, and aligning their pooled capital investments in standardized spatial data layers and content.
14. By itself, FGDC's resources are insufficient to steward the building of "natural clusters" of partners.
15. We need mechanisms for allocating and sharing data collections and costs efficiently, effectively, and fairly, with data development and stewardship being at the right place by the right organization. There should be a two-way flow of information, with users posting and sharing data in Web-enabled clearinghouses.
16. If spatial data is an important part of the nation's information infrastructure, it should be constructed, maintained, renewed, and budgeted for over its life cycle as any other critical capital asset.
17. To improve geospatial information investments, alternative financing mechanisms to the current Federal appropriation "stovepipes" are needed.
18. Creative financing outside of government appropriation cycles may be available and should be pursued to fund these crucial capital assets (spatial data stores) with useful lives of more than the 12-month budget cycle. In the case of other national infrastructure and community development activities (roads, airports, housing stock, small businesses, etc.) the Federal government has used financial intermediaries (such as state bond banks, Fannie Mae, Community Development Corporations, and Small Business Investment Companies) to pool and administer local public and private resources through national investment criteria. Similar intermediary funding mechanisms could build out the NSDI faster, and at a pace that platforms like E-Government and the Digital Economy demand.
19. To attract cross-cutting public funding and private sector investment, the NSDI (and the interoperability it promotes) needs:
20. A cogent Business Plan, with metrics on data mandates, returns on investment and cost/benefit analyses of actual state and regional partnerships for spatial data
21. A Financing Strategy to implement and provide resources and incentives for collaboration in that Business Plan
22. An open, evolutionary technology development process to frame interoperability principles, and the engineering test beds to prove the principles workable involving users from all government levels, business, academia and the nonprofit community.
23. A Web-based system to track progress and share information about the status of Framework and other data.
24. Participants from several states and the private sector expressed interest to begin working with the Federal government on specific attainable projects as part of a strategic plan to accelerate development of the NSDI.

RECOMMENDATIONS

Participants made the following recommendations:

1. Accelerate efforts to develop Framework data layers, and increase participation in Framework development and conformity to standards at all levels of government.
2. Urge all federal agencies and departments (including DOD and NASA) to find ways to adopt standards, use the Web, and make useful information and data products available to other Federal, state, local and tribal government entities, the private sector, and the public.
3. Through coordinated efforts by FGDC, NPR, and other entities, incorporate spatial information in the development of an Interactive Town Square. Spatial data can help facilitate public access to information, products and services in a way that citizens prefer - one stop, by place, by issue and by function rather than by organization. Spatial data can also enhance accountability of government for results by connecting performance information to locality.
4. In alliance with State, local, and tribal partners, encourage the development of a national cadastral (parcel mapping) layer providing parcel information, outlines and ownership. This should be a priority given the many uses for home and business location information, and of sufficiently high resolution so as to be useful to local and tribal governments (which usually require greater detail than their state or federal counterparts.)
5. Supplement the NSDI Clearinghouse with a map showing which Framework data layers exist for each county and city in the nation. Encourage government and private sector entities to document and register in an NSDI Clearinghouse legacy data or planned data collection activities that might fill in the gaps in coverage. Strive for a national inventory of spatial data that is accessible, comprehensive and always up to date, showing the quality (conformance to standards), scale and maintenance cycle.
6. Encourage Federal participation and facilitation of intergovernmental and public-private partnerships and alliances to maximize the benefit of the NSDI. The private sector has important roles to play as a contractor and provider of data, and as a primary party in making sharable data commercially available and useful.
7. Given that much geospatial information is generated at the local and tribal level, support the development of interagency and intergovernmental partnerships and alliances of “nested responsibilities” in which the appropriate levels of government (or their outsourced providers) and the private sector collect and maintain data, using national and market-driven standards.
8. Build a business case for the NSDI that would justify funding from legislative bodies and financial markets.
9. Find alternatives to the current legislative funding process. The current legislative appropriation process responds better to narrowly defined programs, not to requests for inter-agency and intergovernmental multi-year investments as is re-

quired for the NSDI. To the extent that we must continue to depend on appropriated funds, we must do a better job of explaining to Congress and State legislatures the need and benefits of aligning investments that achieve the NSDI.

10. Align and leverage interagency and intergovernmental geospatial capital planning and budgeting processes through memoranda of understanding or other cross-cutting arrangements that incorporate common investment criteria, and consortia that responsibly maximize the efficiency and effectiveness of shared information.
11. Implement effective investment monitoring procedures to ascertain whether changing to a pooled investment strategy with nested responsibilities results in individual and aggregate savings, better quality data and more robust privacy, security, public access and other "social capital."
12. Revise OMB Circular A-16 to reflect the technological and institutional changes that have taken place since it was promulgated in October 1990 and to reflect the recommendations made in the roundtables and by the recent FGDC Design Study Team.
13. OMB should perform a leadership role to help the FGDC and Federal agencies develop a new strategic plan to accelerate development of the NSDI.
14. Local, Tribal and State governments should have one Federal champion within a geographic area acting as a liaison or portal to all Federal agencies through which they can coordinate and communicate regarding NSDI activities. The position could be modeled after the River Navigator in the American Heritage Rivers program.
15. Use the pending FEMA/North Carolina Cooperating Technical State Memorandum of Agreement (FEMA-NC) or other precedents as a starting model for other agencies to use to establish Federal/State alliances with other states to accelerate development of the NSDI.
16. Participate in standards-setting organizations (such as OpenGIS) that support COTS (commercial off the shelf software, hardware, and data services) with functions robust enough to satisfy then normal requirements of government users.
17. Establish Federal/State partnerships in other states to pursue specific projects to move the national NSDI effort forward, and use them to help build the business case for integration.

IMPLEMENTATION OF RECOMMENDATIONS

Participants expressed the hope that OMB, the FGDC, FGDC agencies, States, and the private sector would build upon the momentum created by the roundtables. Consistent with the objectives of the OMB Information Initiative, OMB considers that the following initial actions in response to the discussions and recommendations at the July 18 Roundtable might improve the quality of the information the Federal government collects and disseminates while minimizing collection burden and cost. These actions might reenergize the FGDC and give new direction and motivation to Framework development. OMB staff plans to monitor the progress of the suggested actions and will en-

deavor to encourage the parties to take action so that momentum is sustained.

1. Revise OMB Circular A-16. OMB and FGDC staff have begun to work on a possible revision of OMB Circular A-16.
2. Build and maintain a comprehensive NSDI Framework inventory. The FGDC will begin working with FGDC agencies, State, local and tribal governments, and the private sector in an effort to build and keep current a Web-enabled NSDI Clearinghouse Map and inventory showing which Framework data layers exist for every county and local jurisdiction in the nation. The Web-enabled Clearinghouse Map and inventory will build upon the Framework Data Survey conducted by the National States Geographic Information Council (NSGIC) in 1997 in partnership with the FGDC. The FGDC will work with NSGIC to update and Web-enable the Framework Data Survey, hopefully by October 31, 2000, so that respondents will be able to use it to complete and maintain the Framework inventory on the Web. The Map and inventory should be designed to show for each data collection the degree of coverage, quality of coverage (conformance to standards) scale or resolution, accessibility, and maintenance cycle. As respondents submit their metadata documentation to the NSDI Clearinghouse, the goal is to automatically update the inventory and status graphic map. The FGDC will ask each FGDC agency and each State or region to designate a point person or contact by October 10, 2000 to coordinate the effort. The FGDC will ask each point person to begin the inventory collection as soon as the updated Survey is available on the FGDC's Website (no later than November 1, 2000). The FGDC will ask responding point persons to post responses to the NSDI Clearinghouse Map and inventory as soon as they have the information and to complete the inventory by March 31, 2001.
3. Establish State and Regional Framework Implementation Teams. The goal is to compile and maintain a seamless set of Framework data layers at the State, local, and tribal levels consistent with national and market-driven standards for interoperability.
    a) The FGDC should invite States, regions (of States or groups of States), and Federal FGDC agencies to immediately establish Framework Implementation Teams (Teams) to develop seamless statewide portions of the NSDI. North Carolina, New Jersey, Texas, Kentucky, New York, Oregon, Wisconsin, and Wyoming, have each expressed interest in forming a Team. The FGDC will ask FGDC agencies to participate on each Team, as appropriate.
    b) The FGDC should establish a Federal Partners Team (Partners Team) consisting of representatives from FGDC, OMB, and each of the seven lead Federal agencies listed below. The principal role of the Partners Team will be to focus federal agency efforts toward building and distributing integrated national Framework data assets. The FGDC should ask Partner Team agencies to use the Team efforts to accelerate and coordinate the development and use of needed data standards and implementation tools. The lead Federal agencies designated in OMB circular A-16 with respect to each Framework layer are:
        - Digital Ortho Photography USGS and NRCS

- Elevation — USGS
- Geodetic Control — NGS
- Administrative Boundaries — Census
- Ground Transportation — DOT
- Hydrography — USGS, EPA
- Cadastral — BLM

c) Beginning October 15, each State or region establishing an Implementation Team may submit a general working plan and time schedule to complete the state or region's 7 basic Framework layers, and other layers and categories of data agreed upon by the Team, to the Federal Partners for posting on the FGDC Website. Plans should be consistent with the principles of the NSDI and should address maintenance requirements, distribution strategies, performance and outcome measures, data stewardship responsibilities, known financial requirements and options, and relevant public policy issues such as public access, privacy and security. Plans should be in 90-120 day segments, so that progress and performance can be more readily measured, and work product disseminated more quickly to the public and the FGDC Clearinghouse. Plans should identify "burning issues" such as flood plain mapping, transportation gridlock, safety, GASB 34 compliance, economic development, and wetlands and other environmental protection.

d) The FGDC should ask each Team to use, develop, and test Framework standards and implementation tools. If standards and implementation tools exist, Teams should use them and test them. If they don't exist, a Team should work with the appropriate lead Federal agencies to develop standards, and then use and test them. The FGDC will ask Federal Partners and Teams to coordinate in the development of needed standards and implementation tools.

e) North Carolina and FEMA presented information to the July 18 roundtable on their plans to respond to flood mapping needs in North Carolina by executing a Cooperating Technical State Agreement (FEMA-NC) that involves a number of other Federal agencies. OMB has circulated FEMA-NC for agency comment. North Carolina and its Federal partners already have developed a preliminary working plan and have identified various tasks needed for the flood-mapping project. At the July 18 roundtable, representatives from NOAA, USGS, EPA, and several other Federal agencies expressed an interest in partnering with North Carolina in Framework development as well as the flood-mapping project. For example, a participant from NOAA indicated NOAA would develop a SLOSH model in North Carolina, continue developing Risk Vulnerability Tools, work on LIDAR, and help coordinate efforts with North Carolina in other NOAA program areas such as Coastal Risk. The FGDC expects North Carolina, FEMA, other signatories of FEMA-NC, and other Federal agencies to expand the working plan to include the rest of the 7 basic statewide Framework layers.

f) Members of each Team should enter into a partnership Framework Memorandum of Agreement (Framework MOA). Each Team may develop its own

Framework MOA or use FEMA-NC as a model.

g) New Jersey has indicated its intention to submit a proposal to test its "nested" organizational model to build statewide spatial data sets that leverage local investment and expertise. New Jersey proposes to focus first on the construction of a seamless statewide cadastral data layer that it will build through a partnership of Federal, State, county, and local organizations. New Jersey has proposed that the data sets be maintained by counties. Its model utilizes Web-based technology to maintain the data set and to share the data with the public and other governmental organizations. Representatives from FEMA, EPA, NRCS and BLM expressed interest at the July 18 Roundtable in participating on a New Jersey Team. The FGDC will invite other Federal agencies to also participate. The FGDC will work with the parties to facilitate the rapid development of a Framework MOU.

h) The U.S. Fish and Wildlife Service (FWS) has expressed preliminary interest in submitting a proposal to partner with individual Teams to test and implement data stewardship and partnership responsibilities for building an integrated Wetlands data layer of the NSDI. FGDC should encourage FWS to proceed with this proposal.

i) The FGDC Coordination Group and Steering Committee should designate a Federal champion for each Team to act as a liaison or portal to all Federal agencies and through which State and local Team participants can coordinate and communicate regarding Team activities.

4. Establish a Financing Solutions Team. The FGDC should invite the spatial data community to quickly establish a Financing Solutions Team (Financing Team). The purpose of the Financing Team is to work with Federal agencies, States, regions and tribal areas, and the private sector to identify and develop intergovernmental and public-private financing capabilities to support the NSDI and the implementation strategies of the Teams or Consortia. The Financing Team should include representatives from Federal and State governments, financial institutions, professional organizations, academic institutions, and non-profit organizations. The Financing Team should help build a business case for the NSDI that would justify funding from legislative bodies and financial markets.

   a) The Financing Team should identify and evaluate alternative ways to align the present stove-piped legislative appropriation process. It should help develop the evidence to assist Federal agencies and States collaboratively fund (and explain to their separate appropriations sources the reasons for funding) spatial data infrastructure investments yielding interagency and intergovernmental benefits and economies of scale.

   b) It should explore ways to align and leverage interagency and intergovernmental geospatial capital planning and budgeting processes through memoranda of understanding or other cross-cutting arrangements that incorporate common investment criteria and consortia that responsibly maximize the efficiency and effectiveness of shared information.

   c) The Financing Team should advise and support the efforts of the Teams or Consortia.

5. Share knowledge gained. The FGDC should work together with Federal agencies and States in an effort to establish a mechanism for developing and sharing econometric case studies regarding shared investment in spatial data assets and decision support tools.
6. Establish an Implementation Online Forum . The FGDC will establish and host an Implementation Online Forum (IOF) for participants in these activities to use to communicate and share information. Each implementation Team will have a separate discussion area. Team participants will access the IOF with a Password. Participants will be able to post and edit documents in their respective secure areas. They also will be able to track progress on other Teams, and share ideas and discuss issues with participants on their own and other Teams.